

CLAIMS

1. A particulate water-absorbent resin composition, which is a particulate water-absorbent resin composition comprising a water-absorbent resin (A) of a crosslinked structure obtained by polymerizing an acid-group-containing unsaturated monomer,

which composition has a particle size such that particles in the range of 850 to 150 µm (but not including 850 µm) account for not less than 90 weight % of the entirety, and

10 which composition contains a tetra- or more functional polyol (B) at least on surfaces.

2. A particulate water-absorbent resin composition, which is a particulate water-absorbent resin composition comprising a water-absorbent resin (A) of a crosslinked structure obtained by polymerizing an acid-group-containing unsaturated monomer,

which composition contains a tetra- or more functional polyol (B) and a tri- or more functional polycation at least on surfaces.

20 3. A particulate water-absorbent resin composition according to claim 2, which has a particle size such that particles in the range of 850 to 150 µm (but not including 850 µm) account for not less than 90 weight % of the entirety.

25 4. A particulate water-absorbent resin composition, which is a particulate water-absorbent resin composition comprising a water-absorbent resin (A) of a crosslinked structure obtained by polymerizing an acid-group-containing unsaturated monomer,

which composition has a particle size such that particles in the range of 850 to

150 µm (but not including 850 µm) account for not less than 90 weight % of the entirety, and

which composition satisfies the following relation:

liquid distribution velocity (LDV) (mm/s) > -0.186 × water absorption capacity without load (CRC) (g/g) + 5.75
5 (wherein LDV > 0.10 (mm/s)).

5. A particulate water-absorbent resin composition, which is a particulate water-absorbent resin composition comprising a water-absorbent resin (A) of a crosslinked structure obtained by polymerizing an acid-group-containing unsaturated monomer,
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which composition has a particle size such that particles in the range of 850 to 150 µm (but not including 850 µm) account for not less than 90 weight % of the entirety, and

15 which composition is in the range of 0.03 to 0.15 in surface OH/C ratio as determined by photoelectron spectrometry.

6. A particulate water-absorbent resin composition according to claim 4 or 5, which contains a tetra- or more functional polyol (B) at least on surfaces.
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7. A particulate water-absorbent resin composition according to any one of claims 1 to 6, wherein the water-absorbent resin (A) is in the range of 300 to 600 µm in weight-average particle diameter (D₅₀) and in the range of 0.25 to 0.45 in logarithmic standard deviation ($\sigma\zeta$) of particle size distribution.
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8. A particulate water-absorbent resin composition according to any one of claims 1 to 3 or claim 6, wherein the tetra- or more functional polyol (B) is contained in the range of 0.01 to 20 weight % relative to the water-absorbent resin (A).

9. A particulate water-absorbent resin composition according to any one of claims 1 to 3 or any one of claims 6 to 8, wherein the tetra- or more functional polyol (B) is a sugar alcohol.

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10. A particulate water-absorbent resin composition according to any one of claims 1 to 9, which is not less than 20 g/g in water absorption capacity without load (CRC).

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11. A particulate water-absorbent resin composition according to any one of claims 1 to 10, which is not less than 20 g/g in water absorption capacity under load (AAP).

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12. A particulate water-absorbent resin composition according to any one of claims 1 to 11, which is not less than 10 ($10^{-7} \times \text{cm}^3 \times \text{s} \times \text{g}^{-1}$) in saline flow conductivity (SFC).

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13. A particulate water-absorbent resin composition according to any one of claims 1 to 12, which is not less than 0.15 (g/g/s) in water absorption capacity without load (CRC) (g/g)/liquid-sucking-up rate (WR) (s).

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14. A particulate water-absorbent resin composition according to any one of claims 1 to 13, which is not less than 0.15 (g/g/s) in water absorption capacity under load (AAP) (g/g)/liquid-sucking-up rate (WR) (s).

15. A particulate water-absorbent resin composition according to any one of claims 1 to 14, which is not less than 0.50 ($10^{-7} \times \text{cm}^3 \times \text{g}^{-1}$) in saline flow conductivity (SFC) ($10^{-7} \times \text{cm}^3 \times \text{s} \times \text{g}^{-1}$)/liquid-sucking-up rate (WR) (s).

16. A particulate water-absorbent resin composition according to any one of claims 1 to 15, which is in the range of 300 to 600 μm in weight-average particle diameter (D50) and in the range of 0.25 to 0.45 in logarithmic standard deviation 5 ($\sigma\zeta$) of particle size distribution.

17. A particulate water-absorbent resin composition according to any one of claims 1 to 16, wherein the water-absorbent resin (A) of the crosslinked structure is a further surface-crosslinked one.

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18. A process for production of a particulate water-absorbent resin composition, which is a process for production of a particulate water-absorbent resin composition including a water-absorbent resin (A) of a crosslinked structure obtained by polymerizing an acid-group-containing unsaturated monomer,

15 wherein the water-absorbent resin (A) is such that particles in the range of 850 to 150 μm (but not including 850 μm) account for not less than 90 weight % of the entirety, and further wherein the process includes a step of mixing the water-absorbent resin (A) and a tetra- or more functional polyol (B) together.

20 19. A process according to claim 18 for production of a particulate water-absorbent resin composition, wherein the tetra- or more functional polyol (B) is a sugar alcohol.

25 20. A process according to claim 18 or 19 for production of a particulate water-absorbent resin composition, wherein the water-absorbent resin (A) is in the range of 300 to 600 μm in weight-average particle diameter (D50) and in the range of 0.25 to 0.45 in logarithmic standard deviation ($\sigma\zeta$) of particle size distribution.

21. A process according to any one of claims 18 to 20 for production of a particulate water-absorbent resin composition, which further includes a step of carrying out a heat treatment so that 10 to 90 % of the mixed tetra- or more functional polyol (B) will remain unreacted in the particulate water-absorbent resin
5 composition.

22. A process according to any one of claims 18 to 21 for production of a particulate water-absorbent resin composition, which further includes a step of causing the water-absorbent resin (A) to further react with a surface-crosslinking
10 agent (C) other than the tetra- or more functional polyol (B).

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